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EXAMINER

PSITOS, ARISTOTELIS M

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,561

Applicant(s)

SEO, JIN GYO

Examiner

Aristotelis M. Psitos

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 27-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 27-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 3/18/05 + 10/17/03
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☒ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2653

DETAILED ACTION

Applicant's response of 3/18/05 has been considered with the following results.

Specification

The amendment to the title of the invention is appreciated.

Information Disclosure Statement

The submitted IDS document of 3/18/05 has not been reviewed because it is not in English and no statement of relevancy of such by someone familiar with the language has been submitted.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the newly inserted terminology with respect to "two different width sets". No support for such language is clearly found in the specification as originally filed. Applicant's cooperation in identifying such and or appropriate amendments to the specification – absent introduction of any new matter – is respectfully requested.

Claim Objections

Claim 17, the examiner cannot ascertain which figure/where the particularly claimed pulse limitations are depicted/disclosed. Further clarification is respectfully required.

Claim 22 – the examiner cannot readily ascertain as to which pulse this is.

Claim 31 – the predetermined reference as recited for the generating step- ultimate lines of the phrase is not clear. The examiner is not certain as to what the predetermined reference is. Further Clarification is respectfully requested.

Claim 40 recites limitations that the examiner cannot map to the remainder of the specification/drawings. Further explanation is respectfully requested.

Claims 43-48 are objected to for failing to further limit their respective parent claim.

The examiner cannot readily ascertain from these claims the "fourth width set", "second pulse width set", "third pulse width set".

No rejection(s) are being pursued at the present time. Nevertheless, absent a sufficient response from applicant, failure to respond could result in introduction of rejections in any subsequent actions.

Art Unit: 2653

It would assist the examiner greatly if labels/or a legend were associated with figure 4. Applicant's assistance is requested.

The examiner details his interpretations with respect to the above in the following action.

Response to Arguments

Applicant has attempting to respond by indicating paragraph 43 and figures 2,4, and 5. The examiner has reviewed such and maintains the above objection. Further clarification is REQUIRED.

As far as the claims recite positive limitations and as interpreted below, the following rejections are made.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 44 is not clear. As interpreted by the examiner, this limitation contradicts the disclosed invention, i.e., the third pulse set is between the first pulse and the last pulse, especially since as written this would imply there is a third set a priority to a second set – which doesn't follow, nor is there clear antecedence, i.e., there is no second pulse.

Further clarification is respectfully requested.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2653

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1 Claims 1-7, and 42-48 are rejected under 35 U.S.C. 102 (b) or alternatively under 103(a) as being unpatentable over JP 2000-215449. The US patent equivalent 6480450 is sent as an English translation thereof. Alternatively this reference could be further modified with Yamada et al – see below.

The following analysis is made:

I	Claim 1:	Fujii et al
An apparatus for generating an optical recording pulse having	abstract/title	
a first pulse,	t-top	
a multi-pulse chain,	tmp1,2,3,4	
and a last pulse to form a domain in an optical medium, comprising:	either tmp5 or see Yamada et al	
a recording pulse generator generating said optical recording pulse; and	fig. 3, 1d	
a controller controlling said recording pulse generator so that according to a type of said optical medium or a recording speed of said optical medium,	fig 3, elements 25/26	
said multi-pulse chain has a plurality of pulses,	yes	

Art Unit: 2653

with at least two different
width sets;

see below

with at least one
width set comprising more than
one equal width pulse,
used to create a mark.

yes see fig. 2

As analyzed by the examiner, the formation of variable pits, 3t ---- up to 11t yields/creates a mpc (multi-pulse chain) predicated on the information length to be recorded, either 3t, 4t, etc.

The prior art of figure 2 notes that these pulse are of equal widths.

Under 102 considerations, the mpc in figure 2 is interpreted to comprise of a plurality of pulse width sets. Either tmp1 and tmp2 as a pulse width set, and tmp3 as a pulse width set, and tmp4 as a pulse width set. The claim language does NOT PROHIBIT such interpretation. In this interpretation, one of the pulse width sets comprises ore than one equal width pulse (tmp1 = tmp2).

Alternatively, under 103 considerations:

The above prior art has difficulties/problems.

However, such equal widths create/result in problem(s) – shifting of the edge of the mark/pit due to the nature of the beast – heat build up.

Figure 1 of Fujii et al teaches/discloses a way to solve such a problem, but reducing the pit width as it progresses along the mark forming period. Further elaboration is depicted in his figure 4c.

The above claim requires that in this mpc there are at least two different width sets – seen to occur in figure 1, wherein each bit for the mark is a width set, *and that one of these width sets has more than one equal width pulse.*

This is still seen as being an obvious variant of the overall teaching from Fujii et al, since the disclosure of figure 1 is to vary each pulse in the mpc. Varying only a selected # of pulses in the mpc so long as the overall effect is to reduce the shifting of the pulse edge due to the heating effects is considered an optimization of the system – parameters – see *In re Peterson, 65 USPQ2nd 1379.*

That is, the examiner considers the teaching from figure 1 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

Art Unit: 2653

In this analysis the examiner has interpreted tmp5 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero.

Hence the above system could be further modified by using the above teaching from Yamada et al so as to include a zero value last pulse and improve the shifting of the pulse edges.

With respect to claim 2, see the description of figure 4c, 10T, 11T, and 14T.

With respect to claims 3 and 46, the CAV ability is found at col. 3 lines 50-53.

With respect to claim 4, this multi pulse chain is established during an initialization of the record medium so as to record the information at the proper signal/power level. Hence the examiner interprets the initialization limitation of claim 4 as inherently present.

With respect to claim 5, the examiner interprets such as being NRZI format. Alternatively, if such were not inherently present, then the examiner would rely upon the acknowledged prior art (further identification as to such is respectfully requested from applicant to complete the search report).

It would have been obvious to modify the base system of 2000-215449 with the well-known format, motivation is to use existing formats in this environment and hence provide for a backward compatible recording ability.

With respect to claims 6 and 7, the reference permits variable value pulse widths as required.

II. With respect to claims 42-48 the following positions are taken.

The following analysis is made:

Claim 42

an apparatus for generating
an optical recording pulse for
forming a domain on an optical medium,
comprising:

a recording pulse generator
generating said optical recording pulse
having

Fujii et al

abstract/title

pulse generator
present

See figure 2

a first pulse,

t-top

Art Unit: 2653

a multi-pulse chain having a second pulse width set with a second width,

tmp 1 & 2

and a last pulse in response to non-return to zero inverted data;

tmp5

and a controller controlling said recording pulse generator to generate a

cpu

third pulse width set with a third width different from said second width of said second pulse width set of said multi-pulse chain,

either tmp3 or tmp4

said third pulse width set inserted into said multi-pulse chain of said optical recording pulse,

wherein at least one of said second pulse

note tmp1, 2

width set and said third pulse width set

comprises more than one equal pulse width.

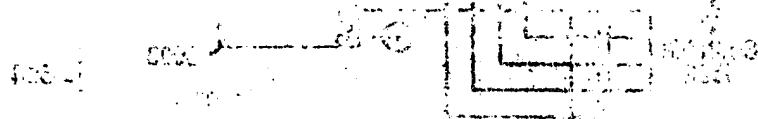
Under 102 considerations, the examiner interprets the second pulse width set as comprising of more than one equal pulse width, tmp1 and tmp2, and the third pulse width set as stated above.

The width of the second pulse width set is different from that of the third pulse width set (width of tmp1 & tmp2 is different from that of tmp3.

Under 103 considerations, the variation of the pulse widths of all the pulses in the mpc is taught by the Fujii et al reference.

Hence selectively varying the widths of the pulses is considered merely an optimization techniques obvious to those of ordinary skill in the art – see – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.



Art Unit: 2653

In this analysis the examiner has interpreted tmp6 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero so as to improve the shifting of the pulse edges.

With respect to claim 43, such is accomplished.

With respect to claim 44, the examiner interprets the claim to mean that the third pulse width set is between the first pulse and the LAST pulse, since there is no SECOND PULSE.

With respect to claims 45, 46, 47, the cpu performs this limitation.

With respect to claim 48, the examiner interprets this to refer to CAV formatting ability. See the above discussion with respect to claims 3 and 46 for such.

Response to Arguments

Applicant's arguments filed 3/18/05 have been fully considered but they are not persuasive. .

As indicated in the above rejection: for 102 grounds, the claimed invention does not distinguish itself from the reference for the reasons stated. Under 103 considerations, the reasons stated in the above paragraph with respect to selecting a narrower range within the entire range is considered an optimization capability support the obviousness rejection of the claimed invention.

2. Claims 8-25 are rejected under 35 U.S.C. 102 (b) or alternatively under 103(a) as being unpatentable over JP 2000-215449. The US patent equivalent 6480450 is sent as an English translation thereof. Alternatively this reference could be further modified with Yamada et al – see below.

The following analysis is made:

I. Claim 8

Fujii et al

a method of generating an
optical recording pulse having

abstract/title/

a first pulse,

t-top

a multi-pulse chain,

tmp1,2,3,4

and a last pulse, comprising:

either tmp5 or
see Yamada et al

Art Unit: 2653

setting a recording mode for forming a domain on an optical medium; depending on the type of said optical medium or a recording speed of said optical medium, see cpu discussion

generating said multi pulse chain with a plurality of pulses inherently occurs

having at least two different width sets, see figures 1/4c

with at least one width set comprising more than one equal width pulse, see below analysis

and generating said optical recording pulse having said first pulse, said multi-pulse chain, and said last pulse. occurs.

As analyzed by the examiner, the formation of variable pits, 3t — up to 11t yields/creates

a mpc (multi-pulse chain) predicated on the information length to be recorded, either 3t, 4t, etc.

The prior art of figure 2 notes that these pulse are of equal widths.

Under 102 considerations, the mpc in figure 2 is interpreted to comprise of a plurality of pulse width sets. Either tmp1 and tmp2 as a pulse width set, and tmp3 as a pulse width set, and tmp4 as a pulse width set. The claim language does NOT PROHIBIT such interpretation. In this interpretation, one of the pulse width sets comprises ore than one equal width pulse (tmp1 = tmp2).

Alternatively, under 103 considerations:

The prior art has difficulties/problems.

However, such equal widths create/result in problem(s) — shifting of the edge of the mark/pit due to the nature of the beast — heat build up.

Figure 1 of Fujii et al teaches/discloses a way to solve such a problem, but reducing the pit width as it progresses along the mark forming period. Further elaboration is depicted in his figure 4c.

The above claim requires that in this mpc there are at least two different width sets — seen to occur in figure 1, wherein each bit for the mark is a width set, *and that one of these width sets has more than one equal width pulse.*

Art Unit: 2653

This is still seen as being an obvious variant of the overall teaching from Fujii et al, since the disclosure of figure 1 is to vary each pulse in the mpc. Varying only a selected # of pulses in the mpc so long as the overall effect is to reduce the shifting of the pulse edge due to the heating effects is considered an optimization of the system – parameters – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figure 1 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

In this analysis the examiner has interpreted tmp5 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero.

Hence the above system could be further modified by using the above teaching from Yamada et al so as to include a zero value last pulse and hence improve the shifting of the pulse edges.

With respect to claim 9 the controller permits such determination.

With respect to claim 10, CAV is so identified – see col. 3 lines 50-53.

With respect to claim 11, such power multi-chain generation is normally performed during Initialization – i.e., to establish proper power levels for subsequent recording.

Response to Arguments

Applicant's arguments filed 3/18/05 have been fully considered but they are not persuasive.

As indicated in the above rejection: for 102 grounds, the claimed invention does not distinguish itself from the reference for the reasons stated. Under 103 considerations, the reasons stated in the above paragraph with respect to selecting a narrower range within the entire range is considered an optimization capability support the obviousness rejection of the claimed invention.

II. With respect to claim 12,

The following analysis is made:

Claim 12.

Fujii et al/

A method for recording in an optical recording apparatus, comprising: generating an optical recording pulse having

abstract/title/ figure 2

Art Unit: 2653

a first pulse,	t-top
a multi-pulse chain,	tmp1,2,3,4
and a last pulse,	tmp5/Yamada et al
said multi pulse chain	tmp1 & 2; tmp2 & 3
having a plurality of pulses	
with a plurality of width sets;	
with at least one width set	
comprising more than one equal	
width pulse;	
and forming a domain on an	so recorded
optical medium in accordance	
with said optical recoding pulse.	

Under 102 considerations, the examiner takes the same position (as taken with respect to claims 1 and 7) for the reasons stated above under the 102 considerations.

Under 103 considerations, the examiner takes the same positions (as stated above with respect to claims 1 and 7) for the reasons stated above under the 103 considerations.

In addition, the following positions with respect to the following dependent claims are elaborated under 103 considerations.

With respect to claims 13, 14, 15, 16, 17, 18, and 19 see the description of figure 4c with respect to the pulse chain for various mark pulses, e.g., 6T, 9T, 10T, 11T or 14T.

With respect to claim 13, such follows from the above selective variations of the pulse widths. In a 10T mark, there are at least 4 pulses in the mp chain, not including the first pulse, t top, and a last pulse in the sequence. Hence the second and third pulse is interpreted by the examiner as the second pulse set, and the fourth pulse is the 3rd pulse set. Again, the selective pulse width variation is an optimization within the broad range taught by Fujii et al.

With respect to claim (14) recites that the mpc (multi-pulse chain) comprises of a set of 2nd and 3rd pulses (i.e., as interpreted by the examiner each of these sets comprises of two pulses each) and that the widths are narrower than either the first or last pulse.

Art Unit: 2653.

Again as taught by Fujii et al, variation of all the pulse widths is accomplished, and selectively varying something less than all the widths, i.e., every other one for instance, is an obvious variant.

With respect to claim (15) requires 3 sets of the mpc wherein the widths of these pulses are not the same.

As taught by Fujii et al, variation of all the pulse widths is accomplished, and selectively varying is an obvious variant.

With respect to claim 16, as noted above the ability of having a cooling off pulse op is taught by the Yamada et al reference – pulse designated as op. Hence by including such a zero signal pulse, and the variation(s) of the non-zero pulses meet this limitation.

With respect to claim 17, obviously one of the earlier pulse widths is wider than that of the last pulse width.

With respect to claim 18, this flows from the variation of the pulse widths. That is one of the earlier pulse widths is narrower than the previous pulses in the chain, and yet wider than one of the following pulses.

With respect to claim 19, this flows from the variation of the pulse widths. That is selectively varying the widths of every other pulse in a 9t mark yields such.

With respect to claim 20, obviously information is received by the above system in order to generate the multi pulse chain.

With respect to claim 21, different types of discs are discussed see col. 4 lines 1-5.

With respect to claim 22, see col. 3, lines 50-53 for CAV, CLV for example.

III. With respect to claims 23- 25 the following positions are taken.

The following analysis is made:

Claim 23

Fujii et al

A method for recording
in an optical recording apparatus,
comprising:

see abstract/title

generating an optical recording pulse
having

inherently present

Art Unit: 2653

a first pulse having a first width,	t-top
a multi-pulse chain having a plurality of pulses, and	tmp1 - tmp4
a last pulse having a last width;	tmp5
forming a domain on an optical medium in accordance with said optical recording pulse;	present
receiving information corresponding to a length of a domain;	from the input source
and	
changing at least one of said pulses of said multi-pulse chain to have sets of pulses with at least two different width sets, with one width set comprising more than one equal width set in response to said length of said domain.	yes when the mark pulse changes see below

Under 102 considerations, In the above analysis applicant's attention is drawn to figure 2. This represent a prior art strategy – but not limited to all of the incoming mark length. That figure merely represents on the mark lengths, 9T plus. In figure 2, the examiner interprets tmp1 and tmp2 and being a width set tmp3 as another width set, and tmp4 as yet another.

Hence, when a mark length of the appropriate length requiring the lengthening of the entire pulse pit forming period (see figures 4a-c for such a lengthening), the system changes the mpc accordingly.

The claimed language does not prohibit the above interpretation of the width sets.

Under 103 considerations, as further taught/defined in Fujii et al, figures 1 & 4, teaches the ability of varying the widths of the mpc, i.e., all of the pulses comprising the mpc.

Hence the ability of varying the widths of the mpc is taught, in which the widths are narrowed as they progress.

The ability of modifying the variations (widths) of selective pulses is considered an optimization capability – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figure 1 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

Art Unit: 2653

Hence the varying the widths of these pulses so as to be different is considered an obvious variant of that already defined/taught in Fujii et al.

Motivation is to reduce the overall complexity of the systems hardware by selectively varying certain pulses in the mpc so as to reduce the effects of shifting pulse edges.

With respect to claims 24 and 25, It follows that one of these width sets is greater than (claim 24) or narrower than (claim 25) one of the first/last or another mpc.

Response to Arguments

Applicant's arguments filed 3/18/05 have been fully considered but they are not persuasive. .

As indicated in the above rejection: for 102 grounds, the claimed invention does not distinguish itself from the reference for the reasons stated. Under 103 considerations, the reasons stated in the above paragraphs with respect to selecting a narrower range within the entire range is considered an optimization capability support the obviousness rejection of the claimed invention.

3. Claims 27-41 are rejected under 35 U.S.C. 102 (b) as anticipated by or under 35 U.S.C. 103 (a) as obvious over JP 2000-215449. The US patent equivalent 6480450 is sent as an English translation thereof. Alternatively further modification with respect to the teaching of Yamada et al for the last pulse.

The following analyses are made:

I. With respect to claims 27-30:

Claim 27

Fujii et al

determining a length of a domain on an optical medium;

cpu ability

and

preparing a recording pulse including first

see discussion thereof

pulse width set having a first width,

t-top

a multi-pulse chain having a second pulse width

tmp2 & tmp3

Art Unit: 2653

set having a second width

and

a third pulse width set having a third

tmp4

width,

and

a last pulse having a last width in order,

tmp5

said second pulse width set being different

from said third width of said third pulse width set,

said recording pulse corresponding to the length

of a domain which is formed on the optical

medium, wherein

at least one of said second pulse width set

tmp2 & 3.

and said third pulse width set comprises

more than one equal pulse width.

As analyzed above, under 102 considerations, see figure 2 for instance for the interpretation of the mark, tmp 2 and tmp3 are the second pulse width set. Such an interpretation is not prohibited by the claim language. Furthermore, interpreting the third pulse width set as tmp4 is also not prohibited. The width of the second pulse set is different than that of the third pulse set (width of tmp2 & tmp3 is not the same as the width of tmp4). The last pulse is interpreted in this mark length as tmp5.

With respect to having the multiple pulses of equal width such is met by tmp2 = tmp3.

Alternatively, under 103 considerations – the examiner relies upon at least the interpretation of a 8T mark and modifying such to selectively vary the widths of the pulses as an exercise in optimization of system parameters – i.e., varying a narrower range of selected pulses as opposed to all the pulses. The variation of all the pulses as being the broad range of variations, and selectively varying a narrower range as an obvious variant, see the position/explanation present above with respect to claim 1.

With respect to the newly introduced terminology

Art Unit: 2653

a) the determining capability – see the discussion with respect to col. 4 lines 32 plus – wherein the CPU performs such.

b) "at least" one of the 2nd, 3rd pulse width set comprises more than one equal pulse width – see the above position, either for 102 or alternatively for 103 considerations wherein arbitrarily varying the widths within the range of all the widths is considered an obvious variant predicated upon optimization consideration. Such selective width variations would reduce the overall complexity of the hardware required to reduce the widths.

With respect to claim 28, as interpreted by the examiner, the recording pulse is appropriately generated, i.e., greater than a minimum length. The examiner respectfully requests applicant's assistance to map this terminology with the remainder of the specification and figures so as to ensure proper interpretation.

With respect to claims 29 and 30, the examiner interprets this claim as attempting to define a second recording pulse set – which is met by either the second pulse set in the 10T, 11T or 14T depicted in figure 4c.

II. With respect to claims 31-32, the following analysis is made:

Claim 31

Fujii et al

A method for forming a domain
on an optical medium, comprising:

abstract/title

preparing a first recording pulse
including

cpu undertaking

a first pulse having a first width,

9T mark - fig.4b
t-top

a multi-pulse chain having at least
two pulses with a second width in a
second pulse width set
and

tmp2 & tmp3

a third width in a third pulse width
set different from said second width,

tmp4

and a last pulse having a last width
in order;

tmp6

wherein at least one of said second
pulse width set and said third pulse

tmp3 & tmp4

Art Unit: 2653

width set comprises more than one equal pulse width:

preparing a second recording pulse including a second multi-pulse chain having a pulse with a fourth width different from one of said second and third widths, and a second last pulse in order;

8T mark fig. 4b

tmp2 & tmp3

generating said first recording pulse in response to a length of said domain greater than a reference; and generating said second recording pulse in response to said length of said domain less than said reference.

performed

In the above analysis, reference is made to figure 4b of the Fujii et al reference.

Under 102 considerations, the examiner interprets the first recording pulse as the 9t mark.

As analyzed above, the mpc exist after the first pulse t-top. In this mpc there is a plurality of pulses, wherein the second pulse width set is interpreted as stated above. There is NO prohibition in the claims Against such an interpretations.

The second recording pulse is the 8T mark, wherein the mpc again follows the t-top pulse.

As interpreted above, the claimed requirements with respect to the widths of the appropriate width sets Is found.

Under 103 considerations:

The variation of the pulse widths of all the pulses in the mpc is taught by the Fujii et al reference.

Hence as indicated above, selectively varying the widths of the pulses is considered merely an optimization techniques obvious to those of ordinary skill in the art – see – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figure 1 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

In this analysis the examiner has interpreted tmp5 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero.

Art Unit: 2653

It would have been obvious to modify the reference above with the additional op pulse as the last pulse, motivation is to improve the shifting of the pulse edges effect.

With respect to claim 32 the examiner interprets such as being NRZI format. Alternatively, if such were not inherently present, then the examiner would rely upon the acknowledged prior art (further identification as to such is respectfully requested from applicant to complete the search report).

It would have been obvious to modify the base system of 2000-215449 with the well-known format, motivation is to use existing formats in this environment and hence provide for a backward compatible recording ability.

III. With respect to claims 33-34 the following analysis is made:

Claim 33

Fujii et al

A method for forming a domain on an optical
medium comprising;

cpu ability

preparing a first recording pulse including first

see discussion thereof

pulse having a first width

10T mark fig. 4c

t-top

a multi-pulse chain having at least two pulses

tmp2 & tmp3

of a second pulse width

set where each second pulse has a

a second width,

a thirds pulse width set having a third

tmp4

pulse width,

and a fourth pulse width set having

tmp5

a fourth width

and a last pulse having a last width in order

tmp7

Art Unit: 2653

said second width of said second pulse width set
different from said third and fourth widths; and

tmp3&4 different
see below

generating said recording pulse when a constant
angular velocity recording process is used
for said optical medium.

final results of the system

In the above analysis, reference is made to figure 4c of the Fujii et al reference.

Under 102 considerations, the examiner interprets the recording pulse as the 10t mark.

As analyzed above, the mpc exist after the first pulse t-top. In this mpc there is a plurality of pulses, wherein the second pulse width set is interpreted as stated above. There is NO prohibition in the claims against such an interpretations.

The requirement that the pulse widths of the second width different from that of either the third width and the fourth width is seen because the width of the second pulse width set – tmp2& tmp3 is indeed different from that of either tmp4 and tmp5.

As interpreted above, the claimed requirements with respect to the widths of the appropriate width sets is found.

Under 103 considerations:

The variation of the pulse widths of all the pulses in the mpc is taught by the Fujii et al reference. Hence as indicated above, selectively varying the widths of the pulses is considered merely an optimization techniques obvious to those of ordinary skill in the art – see – see *In re Peterson, 65 USPQ2nd 1379.*

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

Art Unit: 2653

In this analysis the examiner has interpreted tmp7 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero so as to improve the shifting of the pulse edges.

With respect to claim 34 the following analysis is made:

Claim 34

The method of claim 33, further comprising:

Fujii et al does such

preparing a second recording pulse including

any of the additional pulses

a second first pulse,

2-9 T marks for instance

a second multi-pulse chain having a fifth

see below

pulse having a fifth pulse width set
having a fifth width and a

sixth pulse width set with a sixth width,
and
a second last pulse in order;

and generating said second recording
pulse when said constant angular velocity
recording process is not used for said optical
medium.

With respect to claim 34, this requires an additional pulse – a second recording pulse when no cav mode is operating. Since the reference to Fujii et al disclose both cav and clv modes, the examiner concludes that such a second recording pulse exists.

Any of the above noted pulses - for instance see 9T, see the tmp5 and tmp6 as the 5th and 6th pulse.

The same position under 35 USC 102, i.e., the interpretation of the pulse width sets as stated above with the previous independent claims 27,31 etc. is also taken with respect to this claim.

Similarly, the position under 103, i.e., the variation of the pulse widths – optimization as stated above with the previous independent claims 27,31, etc. is also taken with respect to this claim.

IV. With respect to claims 35-38, the following positions are taken.

Art Unit: 2653

The following analysis is made:

Claim 35

Fujii et al

A method for forming a
a domain on an optical medium,

abstract/title

comprising the operations of:

preparing a first recording pulse
including first pulse width set
having a first width,

figure 4B 9T mark
t-top

a multi-pulse chain having at least
two pulses of a second pulse width set
where each second pulse has a second width,

tmp2 & tmp3,

a third pulse width set having a third
width,

tmp4

and a fourth pulse width set
having a fourth width,

tmp5

and a last pulse having a last
width in order,

tmp6

said second, third, and
fourth widths being different from each
other;

see below

and generating said recording pulse
in response to either one of a
length of said domain and a
recording speed of said domain
for forming said
domain representing data to be
recorded on said optical medium.

final outcome

In the above analysis under 102 considerations, the 9T mark has a mpc following his first pulse t-top. The mpc comprises a plurality of pulses. The examiner interprets the second pulse width set as comprising of pulses tmp2 & tmp3. The claimed third and fourth width sets are identified above. There is NO prohibition in the claims in such an interpretation.

Under 103 considerations, the variation of the pulse widths of all the pulses in the mpc is taught by the Fujii et al reference.

Art Unit: 2653

Hence selectively varying the widths of the pulses is considered merely an optimization techniques obvious to those of ordinary skill in the art – see – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

In this analysis the examiner has interpreted tmp6 as the last pulse. Alternatively as further taught by Yamada et al, the last pulse in his mpc is indicated as the pulse in the time period of op – the cooling off period a value of zero so as to improve the shifting of the pulse edges.

With respect to the CAV ability recited in claim 36, see col 3 lines 50-53.

With respect to claim 38, the examiner interprets such as being NRZI format.

With respect to claim 37, the minimum length is interpreted as 1T.

V. With respect to claims 39-41, the following positions are taken.

Claim 39

Fujii et al

A method for forming a domain on an optical medium comprising:

abstract/title

cpu.

preparing a recording pulse including first

see discussion thereof

Fig. 2

pulse width set having a first width,

t-top

a multi-pulse chain having a second pulse width set having a second width and

tmp1 & tmp2

a thirds pulse width set having a third pulse width,

tmp3

Art Unit: 2653

and

a last pulse having a last width in order, tmp5

said second pulse width set different from said see below

third width of said third pulse width set,

wherein at least one of said second pulse width set and

said third pulse width set comprises more than one

equal pulse width; and

generating said recording pulse in response to such is accomplished

either one of a length of said domain and a

recording speed of said domain for forming

said domain representing data to be

recorded on said optical medium

Under 102 considerations, the examiner interprets the mark pulse shown in figure 2, wherein as analyzed above the second pulse width set is the pulse width of tmp1 & tmp2, and the 3rd and last pulses are as indicated above. There is NO prohibition from such an interpretation from the claimed language. The further limitation with respect to the more than one equal pulse width as recited in this claim exists, i.e., tmp1&tmp2 pulse width is made up of two equal valued pulses.

Under 103 considerations, the examiner relies upon the overall teaching from Fujii et al as a variation of the pulses in the mpc. Selective width modifications thereof, selectively narrowing is an optimization ability and in keeping with In re Peterson, 65 USPQ2nd 1379, an obvious variation.

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all.

Art Unit: 2653

With respect to claim 40, this introduces a fourth pulse width set. Such has been discussed above with respect to claim 33, and hence the ability of introducing another pulse width within this environment is considered also present and met.

Under 103 considerations, the variation of the pulse widths of all the pulses in the mpc is taught by the Fujii et al reference.

Hence selectively varying the widths of the pulses is considered merely an optimization techniques obvious to those of ordinary skill in the art – see – see In re Peterson, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all. The mark pulse of 7T reads would hence meet the limitation of claim 39, while the mark pulse of 8T meets the limitations of claim 40.

The limitations of claim 41 are met. There is no further modification with respect to the op pulse teaching necessary for the limitation of claim 41 and hence such is not made.

Nevertheless, with respect to claims 39 & 40 not requiring the above limitation of claim 41 can be additionally modified by the teaching in Yamada et al with respect to the op pulse, and use thereof in order to reduce the effects of shifting edge pulses is motivation to use the op.

4. Claims 1-7 are rejected under 35 U.S.C. 103 (a) as being obvious over Yamada et al further in view of Yokoi, or alternatively Yamada et al further considered with Fujii et al and both further considered with Yokoi.

The following analysis is made:

Claim 1	Yamada et al
An apparatus for generating an optical recording pulse having a first pulse, a multi-pulse chain, and a last pulse to form a domain in an optical medium, comprising:	abstract/title figures 2/5,
a recording pulse generator	figure 3, element

Art Unit: 2653

generating said optical recording pulse; and	"laser driving circuit"
a controller controlling said recording pulse generator so that according to a type of said optical medium or a recording speed of said optical medium, said multi-pulse chain has a plurality of pulses, with at least two different width sets, with at least one width set comprising more than one equal width pulse, used to create a mark.	inherently present see figures 2/5 see Yokoi/fig. 10

In the above analysis, the examiner interprets the disclosed invention of Yamada et al as providing for a plurality of multi-pulse chains, each chain predicated upon appropriate disc/media type and or speed. Note in particular the disclosure at col. 12 lines 17-52 wherein the system has a multi-speed capability or CAV recording is appropriately performed. This inherently requires appropriate "controller" responsive to appropriate identification – as normally found in lead in areas of present day discs so as to identify either dvd, cd, types as well as their speeds.

Alternatively, if applicant can convince the examiner that such an element is not inherently present, then under 103 considerations, the examiner presents the additional teaching from the Fujii et al reference which discloses the cpu responsive to such.

It would have been obvious to modify the base system of Yamada et al with the above cpu from Fujii et al so as to permit appropriate hardware/controller to yield a recording/reproducing apparatus.

With respect to the last limitation, the examiner interprets this as further discussed in Yokoi, innermost and outermost position(s) for the mpc.

It would have been obvious to modify the base system of Yamada et al/Fujii et al with the additional speed setting abilities with respect to DVDs so as to increase the recording density.

With respect to claims 2-4 and 6-7 such are present in the above multi-chain pulse formats, and the cav mode as noted above.

Art Unit: 2653

With respect to claim 5, the inverted nrzi is interpreted to be present because of the mark edge-recording format.

The method limitations are met when the above system(s) operate.

5. Claims 8-11 are rejected under 35 U.S.C. 103 (a) as being anticipated by Yamada et al further considered with Yokoi, or alternatively with Yamada et al considered with Fujii et al, and both further considered with Yokoi.

The following analysis is made:

Claim 8

Yamada et al

A method of generating
an optical recording pulse
having a first pulse, a
multi-pulse chain,
and a last pulse, comprising:

abstract/title

setting a recording mode for
forming a domain on an optical medium;

depending on a type of said optical
medium or a recording speed
of said optical medium,

see figure 2/5

generating said multi pulse
chain with a plurality of
pulses having at least two different
width sets;
with at least one width set
comprising
more than one equal width pulse;
and

see figure 2/5

see Yamada fig 10

generating said optical recording
pulse having said first pulse, said
multi-pulse chain, and said last pulse.

see figure 2/5

In the above analysis, Yamada et al provides for the ability of having multi-chain pulse format(s) for different speeds – noted the discussion with respect to low recording velocity and high recording velocity.

Claim 8 substantially follows the claimed limitations of claim 1 in paragraph 4 above. See the above analysis with respect to claim 1 and the combination of references therein.

Hence method claims 8, is met for the reasons so elaborated upon in paragraph 4.

Art Unit: 2653

With respect to claims 9, the determination of the existence of two different width sets is inherently present, i.e., the low or high-speed velocity determination.

With respect to claim 10, cav – Is present.

With respect to claim 11, the examiner considers such a limitation to exist – i.e., initialization is a well-known recording mode.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al further considered with Yokoi.

The following analysis is made:

Claim 12	Yamada et al
A method of recording in an optical recoding apparatus, comprising:	abstract/title
generating an optical recording pulse having	
a first pulse,	fp
a multi-pulse chain,	mp
and a last pulse,	op
said multi pulse chain having a plurality of width sets,	see Yokoi et al
with at least one width set comprising more than one equal width pulse; and	either Yamada/Yokoi
forming a domain on an optical medium in accordance with said optical recoding pulse.	final result

In the above analysis Yamada et al generates his mpc with a first, multiple pulses of equal width in his mpc and a last pulse op.

With respect to the multiple width sets for the mpc, such is interpreted to exist in figure 10 of Yokoi, for the various innermost and outermost positions as detailed therein.

Art Unit: 2653

It would have been obvious to modify the base system of Yamada et al with the above additional description of the multiple width sets in the mpc at the various locations for variation of the dvd speed for increasing data density.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 as stated in paragraph 6 above, and further in view of Fujii et al.

Claim 13 requires that the width sets includes a set of second pulses with a width and a third pulse having a width, these widths narrower than either the first or last pulse width.

As noted in figures 1 and 4 of Fujii et al, the pulses of the mpc (multi-pulse chain) are of varying widths, and they are narrower than T_{top} (first pulse).

Hence the ability of varying the widths of the mpc is taught.

The ability of selectively varying the pulses, is a narrowing from reducing the pulse widths of all the pulses and hence is considered an obvious variant for optimization purposes – again see In re Peterson et al as cited above.

With respect to the width of these pulses then being narrower than the last pulse,

As further taught by Yamada et al, the last pulse in his mpc is a zero value op pulse.

Hence by modifying the above system with Fujii et al the limitation is met.

It would have been obvious to modify the references as relied upon in paragraph 6 with the the additional teaching from Fujii et al, motivation is to ensure proper signal recording by introducing a variation of the widths of the pulses to reduce the effects of shifting pulse edges.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 as stated in paragraph 6 above, and further in view of Fujii et al.

This claim recites that the mpc (multi-pulse chain) comprises of a set of 2nd and 3rd pulses (i.e., as interpreted by the examiner each of these sets comprises of two pulses each) and that the widths are narrower than either the first or last pulse.

In keeping with the ability of varying the # of pulses in each mpc as a function of the mark for recording – see figure 4 in Fujii et al, there exists a plurality of width sets. Arbitrarily designating one of these as the first width set, the second width set, etc. is not of patentable weight.

Art Unit: 2653

Figure 1 further teaches the ability of narrowing the pulse widths in the mpc.

Hence the examiner concludes that such a limitation is an obvious variant over the above combined teaching from Fujii et al as noted above in paragraph 7.

9. Claims 15, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 as stated in paragraph 6 above, and further in view of Fujii et al.

This claim requires 3 sets of the mpc wherein the widths of these pulses are not the same.

As noted in figure 4 of Fujii et al, the mpc has a plurality of pulse sets for various mark lengths (7 – 14 T. Designating the pulse set as a single pulse is an arbitrary designation of no patentable weight.

Figures 1 and 4 further teach the ability of narrowing the pulse widths in the mpc.

Hence the examiner concludes that such a limitation is an obvious variant over the above combined teaching from the reference.

With respect to claim 17, it follows that one of the pulses in the mpc is greater than one of the first and last pulses.

10. Claims 18 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 as stated in paragraph 6 above, and further in view of Fujii et al.

The first and last pulses are as analyzed above, in the base reference.

The multi-pulse chain as recited comprises a plurality of width sets, which is taught by the Fujii et al.

These width sets include

a set of second pulses having a second width

See figure 4, 7-14 t marks

and

a third pulse having a third width,

the second and third widths narrower than the

widths of the first and last pulses.

* not the claimed second pulse – see

above problem with claim 44, similar problem is present.

As noted in Fujii et al, for different marks, the width of his multi-chain pulse(s) are narrower- noted mp in figure 4 for instance..

It would have been obvious to modify the base system with the additional teaching from Fujii et al,

Art Unit: 2653

motivation is to provide for appropriately pwm mp chains at the various linear speeds as required for cav recording abilities as noted in col. 2 lines 15-40 of Yamada et al.

With respect to claim 22, Yamada et al also teaches the ability of having the cav multi-pulse chain, while the base reference has the non-cav recording process.

Since the examiner has already presented a motivational reason for the cav mode, no further motivation is necessary.

13. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 12 above, and further in view of Fujii et al.

This claim recites the mpc as having a first and second set of pulses, the width of the first set greater than that of the second set.

As noted in figure 4 of Fujii et al, the ability of varying the widths of the mpc is present.

Hence the ability of varying the widths of the mpc is taught.

The ability of having the first set of the mpc consist of two pulses is shown in figure 2 of Fujii et al, i.e., either as to arbitrarily grouping tmp1 and tmp2 as a first set or alternatively tmp3 & tmp4 as such, or duplicating the tmp1 pulse into tmp1a and tmp1b, or as a selective variation of the pulse widths is considered an obvious variant/whether for duplication of signals, arbitrary nomenclature or for optimization reasons as stated above..

Hence, varying the widths of these pulses so as not to be equal is met and therefore the overall combination/teaching from these figures meets these claimed limitations.

14. Claims 27 and 28 are rejected under 35 U.S.C. 103 (a) as being obvious over Yokoi further considered with Yamada et al and all further considered with Fujii et al.

The following analysis is made:

Claim 27:

Yokoi

A method for recording
in an optical recording apparatus,
comprising:

abstract/title

preparing a recording pulse

inherently prepared

Art Unit: 2653

including first pulse width set having a first width,	see fig. 10 t-top
a multi-pulse chain having a second pulse width set having a second width and	tmp
a third pulse width set having a third width,	the last pulse in the tmp chain
and a last pulse having a last width in order,	see the op in Yamada et al
said second width of said second pulse width set being different from said third width of said third pulse width set,	see below
said recording pulse corresponding to the length of a domain which is formed on an optical medium	
wherein at least one of said second pulse width set and said third pulse width set comprises more than one equal pulse width.	see Fujii et al below

In the above analysis, the examiner interprets the Yokoi et al reference as having the mpc with the second pulse width and third pulse width.

It would have been obvious to modify the base system of Yokoi et al with the above teaching from Yamada et al with respect to the use of a last pulse op so as to reduce the effects of shifting pulse edges by a cooling pulse.

With respect to the limitation that as least one of the second/third pulse width sets has more than one equal pulse width – it is noted that in Fujii et al, for various mark lengths, note for example 7t in figure 4b, the tmp2 and tmp3 pulses are interpreted as the pulses for the second pulse width set. The width thereof is different than the width of the third pulse width set (which is tmp4 only).

With respect to the ability of having a plurality of equal width pulses in one of the pulse width sets, such is considered to be found in Fujii et al – see the noted description of figure 2. Additionally, Yokoi in figure 10 also has such multiple equal width pulses.

Art Unit: 2653

It would have been obvious to modify the reference above with the additional teaching of multiple equal width pulses in a width set since such is considered either a duplication of effects – i.e., splitting a pulse into doublets – communication capability, or as a selective variation of the pulse widths, which is also taught by Fujii et al – i.e., optimization of the teaching from Fujii et al wherein all the pulses are varied in width, and herein selectively modifying the pulse widths – something less than the entire range, see *In re Peterson*, 65 USPQ2nd 1379.

That is, the examiner considers the teaching from figures 1 & 4 to cover a broad range of pulses, all the pulses, while applicants claim attempts to narrow this pulse width reduction to something less than all. Such a selective pulse variation would reduce the # of circuit elements necessary to create/generate the pulses.

15. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the art as applied to claim 27 in paragraph 14 above, and further in view of Yokoi.

With respect to claim 29, this requires a second recording pulse, which follows the format of the first recording pulse – i.e., a first pulse, a mpc, and a last pulse. This second pulse has a fourth width set different from one of the 2nd and 3rd width set.

As further taught by the Yokoi reference – see figure 10, a first recording pulse – that at the innermost region, and a second recording pulse – at the outermost region is found. Furthermore note that the widths of the outermost region – interpreted as the fourth width set, is different from that of the pulses found in the innermost region.

It would have been obvious to modify the base system as relied upon above with respect to claim 27 with the additional teaching from Yokoi – so as to record information at different velocities at various locations – innermost – outermost region(s) for the inherent information density improvement.

The limitations of claim 30 are met.

16. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yokoi considered with Fujii et al.

Art Unit: 2653

Claim 31 has both the first and second recording pulses – see the above combination of references as relied upon with respect to claims 29 – 30. Hence the first and second recording pulses are the innermost and outermost mpcs as noted in figure 10 thereof.

The mpc of the first recording pulse has at least two pulses – figure 10.

The mpc does not have a second and third pulse width set wherein the third pulse width set is different from the second pulse width set.

Fujii et al notes that his mpc can have a multitude of pulses, wherein the examiner interprets each pulse as a pulse width set, and hence the third pulse width set is different from the second width set.

It would have been obvious to modify the base system of Yokoi with the above teaching from Fujii et al for the reasons stated in Fujii et al in varying the pulse widths of the mpc.

With respect to the signal format limitation of claim 32, the examiner interprets the pulses in either of the references as mark – space and these are such nrzi.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aristotelis M. Psitos whose telephone number is (571) 272-7594. The examiner can normally be reached on M-Thursday 8 - 4.

Art Unit: 2653

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571) 272-7589. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Aristotelis M Psiros
Primary Examiner
Art Unit 2653

A handwritten signature in black ink, appearing to be 'A. Psiros', written over the printed name and title of the examiner.

AMP